

## REMARKS

### Summary of Interview

An interview was conducted with the examiner and his supervisor on 20 January 2010. It was agreed that method claims as presented would obviate the rejections over the Phillipou article. Claims directed to a product-by-process would require a declaration accompanied by experimental evidence showing that the features of submersion and pressure would necessarily result in a materially different product than that produced by the method of Phillipou. Product claims directed toward the impregnation formulation itself would be novel over the cited art so long as lignin derivatives are not included as a stabilizer, but may require additional searching for obviousness purposes.

### Claim amendments

Claims 1-15 are cancelled. New claims 16 to 33 are presented. Also cancelled are claims directed toward the product-by-process. The applicant reserves the right to file a divisional application directed toward this aspect of the invention at a later date.

The newly presented claims are believed to distinguish the invention over the cited reference to Phillipou. New claim 16 and 26 are method claims, while new claim 27 is a product claim directed to the formulation itself.

Phillipou discloses a glue used for the manufacture of particle board from wood chips. The glue disclosed in Phillipou comprises mixtures of ammonium lignosulfonate and furfuryl alcohol in various relative proportions, with maleic anhydride disclosed as an optional polymerization catalyst. The wood chips are first treated with hydrogen peroxide, which Phillipou discloses as necessary to cause the glue to bond to the surface of the wood chips. Without such treatment, no bonding to the surface was observed.

### Rejections under 35 USC §102

The following features from the newly added claims are absent from Phillipou, thus the claim is believed novel:

Claim 16:

- a. Phillipou does not disclose a water soluble lignin derivative used as a solubility stabilizer. In Phillipou ammonium lignosulfonate is not used as a stabilizer, but as a polymerizing material. (See Phillipou at page 2, fourth paragraph, "Furfuryl alcohol, ammonium lignosulfate....were used as polymerizing materials")
- b. Phillipou does not disclose submerging a piece of wood in a treating formulation.
- c. Phillipou does not disclose subjecting a submerged piece of wood to pressure from 1-10 bar.

- d. Phillipou does not disclose that the piece of wood being treated is a piece of lumber, but rather wood chips.

Claim 17 -20:

Phillipou does not disclose the identified stabilizers.

Claim 21, 22:

Phillipou does not disclose the claimed concentrations of an aqueous treating solution.

Claim 23:

Phillipou does not disclose a vacuum step.

Claim 26:

Phillipou does not disclose a full cell impregnation process performed in an impregnation vessel, but rather a graft polymerization in which glue is sprayed on the chips such that the polymer binds to the surface of the wood chips (after treatment with an activator).

Claim 27: Phillipou does not disclose a formulation having the identified stabilizers.

#### Rejections under 35 USC §103

##### **Lack of prima facie case of obviousness**

The examiner has not cited any combination of references that supply the missing features noted above. Therefore a prima facie case of obviousness has respectfully not been established. In particular the examiner has not shown a combination of references in which (for claim 16) a piece of wood is submerged in the claimed formulation and subjected to a pressure step. Nor has a combination of references been shown that teaches the stabilizers of claims 17-20, or 27-33, nor the concentrations of claim 21/22, nor a vacuum step of claim 23 or that a piece of lumber is submerged in the formulation as in claim 16. With respect to claim 26, no

combination of references is shown that would teach a full-cell impregnation process performed in an impregnation vessel as in claim 26.

In any event, the newly presented claims are believed not obvious in light of Phillipou. As noted above, Phillipou discloses a glue for making particle board, not a method of impregnating and treating lumber. The glue of Phillipou is applied to the surface, and only bonds after a surface activator is applied. Phillipou makes no disclosure of submerging a piece of wood in a treating solution and does not disclose the step of applying pressure or a vacuum. It is not believed obvious for one skilled in the art to modify Phillipou to meet the features of the present claims. Such a modification would in fact make Phillipou inoperable for its intended purpose, as it would be impossible to make a particle board by Phillipou's method by submerging wood chips in the glue and applying a pressure step. With respect to feature of the wood piece being a piece of lumber, Phillipou's adhesive would have no relevance since one would not manufacture a particle board by submerging a piece of lumber in glue. Since Phillipou contains no teaching of impregnation of any kind, one would not look to Phillipou for guidance in arriving at an impregnation method or product.